

COMPARISON OF WHOLESALE POWER COSTS TO REA-FINANCED SYSTEM BY SOURCES

Prepared by Power Division 4/1/47

Power Federations Compared with Other Suppliers

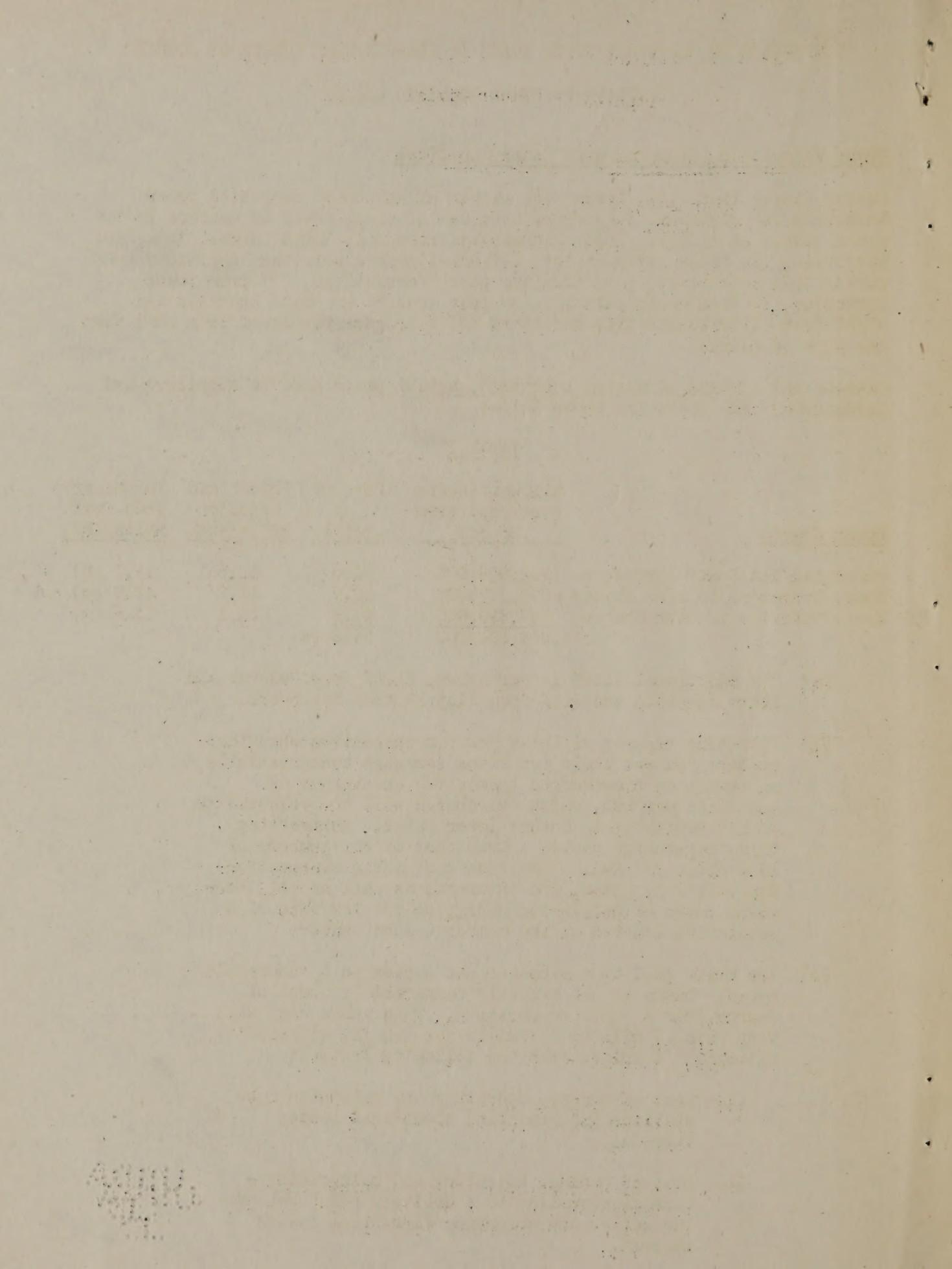
During fiscal year 1949, there were eleven REA-financed federated power borrowers in operation, delivering over 99% of their power to members in the seven states of Alabama, Iowa, Minnesota, Missouri, North Dakota, Texas and Wisconsin. In these seven states, 295 REA-financed borrowers purchased power during this same period - 92 from the power federations, 177 from power companies, 66 from municipalities, 37 from federal or state agencies and eight from distribution-type borrowers (85 borrowers purchased from more than one type of source).

Sources and amounts of energy purchased, actual price paid to suppliers and purchasers' true costs are shown below:

TABLE I

Power Source	Kilowatt-Hours Purchased From Source	Percent of Total	Price Paid Supplier Mills/KWH	Purchasers' True Cost Mills/KWH
Federated REA Power Borrowers	490,078,000	26.6	14.6	13.2 (b)
Power Companies in Same States	880,303,000	47.8	11.2	12.7 (c)
Municipalities in Same States	197,810,000	10.8	14.1	15.6 (c)
	1,568,191,000	85.2 (a)		

- (a) The additional 14.8% is purchased, 14.4% from Federal and state agencies and 0.4% from distribution borrowers.
- (b) Operating reports of these power cooperatives show that members had set their own rates somewhat conservatively so that they overcharged themselves an average of 1.4 mills per kwh, which overcharge will be reflected in member equity or in future lower rates. Subtracting this over-charge yields a true cost to the members of 13.2 mills per kwh. This true cost meets charges for depreciation, taxes, and interest, as well as all operating costs of delivering energy to the low side of a substation located at the member's load center.
- (c) The price paid to a supplier who serves on a "come-and-get-it" basis is not directly comparable to cost of energy from a power cooperative. This added cost will vary from .7 mill to 2.5 mills per kwh for different systems. It arises from the following factors:
 - (1) Cost of owning, operating and maintaining substations and absorbing electrical losses therein.
 - (2) Cost of owning, operating and maintaining a transmission line to a delivery point set by the seller and absorbing electrical losses therein.



- (3) Cost to the buyer of building and maintaining subtransmission or distribution lines because delivery of power is accepted at a point convenient to the seller rather than at the buyer's load center.

Consequently, to the price paid power company or municipality suppliers, there has been added one and one-half mills to arrive at a true cost to the buying cooperative.

Distribution Borrowers Operating Generating Plant Compared with Other Suppliers

Approximately 119 REA-financed distribution systems, not members of federated power cooperatives, generate varying amounts of their power requirements. Of these, 70 own plants that are used for emergency, standby or peaking purposes; eight serve islands with plants which are the sole source of power supply. Ten started generation since March 1949; and two have not submitted adequate records or reports for 1949. The balance, 29, operate their generating plants full time to supply power. The generating capacity owned by this group of 29 is approximately 50% of the total operated by distribution borrowers.

The operation of the full time operating plants owned by distribution borrowers has been analyzed and their costs compared with the power costs of all REA borrowers who purchased power from municipal plants or power companies in the same 17 states. The results of this analysis follow:

TABLE II

<u>Power Source</u>	<u>Kilowatt-Hours Supplied by Source</u>	<u>Price Paid Supplier Mills/KWH</u>	<u>Cooperatives' True Cost Mills/KWH</u>
REA-financed generating plants owned by 29 distribution borrower	187,607,458	12.7 (a)	13.4 (b)
Power Companies in Same States	1,024,278,919	10.6	12.1 (c)
Municipalities in Same States	191,790,903	13.2	14.7 (c)

- (a) Includes all generating costs - operation, maintenance, taxes, insurance, depreciation, interest, overheads, etc., based on reports for calendar year 1949.
- (b) While the cooperative generating plants were originally located at the load centers in some cases the load center has shifted requiring modifications to the distribution system. To cover these costs 0.7 mill has been added to plant costs to permit a true comparison. The plant cost includes substation expenses.
- (c) The price paid to a supplier, who serves on a "come-and-get-it" basis, is not directly comparable to cost of energy from a power cooperative. This added cost will vary from .7 mill to 2.5 mills per kwh for different systems. It arises from the following factors:
 - (1) Cost of owning and maintaining substations and absorbing electrical losses therein.

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3-Comparison of Wholesale Power Costs to REA-financed Systems by Sources.

- (2) Cost of owning, operating and maintaining a transmission line to a delivery point set by the seller.
- (3) Cost to the buyer of building and maintaining sub-transmission or distribution lines because delivery of power is accepted at a point convenient to the seller rather than at the buyer's load center.

Consequently, to the price paid power company or municipality suppliers has been added one and one-half mills to arrive at a true cost to the buying cooperative.

From the preceding data, it is clear that in those states where cooperatives have found it necessary to provide their own power sources, the cost of power to a distribution cooperative during 1949 was substantially the same whether it purchased from a power company, purchased from a federated power cooperative or built and operated its own plant, the maximum difference being about 10%. Although the power costs for 1949 from REA-financed generation exceeded by a small amount the costs from power companies, the following factors should not be overlooked:

1. These plants were built only where no other adequate source of low cost power was available. Without these power sources, there was - and still is - no assurance that adequate generation or transmission facilities would be available to deliver power to the load centers to serve the load growth in these rural areas.
2. Prior to the authorization or construction of these plants, wholesale rates from most power companies in nearby areas were substantially higher than their present rates and higher than present costs of power from REA-financed generation.
3. A sizable portion of the energy generated by REA borrowers was from Diesel plants using high cost fuel. Steam plants are now being built in six of the seven states in which federated power cooperatives operate, as well as in other areas of the country, which will substantially reduce operating costs.
4. The costs shown include charges for full depreciation of expensive generating plants and transmission lines built to carry future loads. As load grows depreciation costs per kwh will shrink.
5. The generating plants owned by distribution cooperatives are small in size. Of the plants analyzed in Table II 50% are less than 2000 kw; the largest is 5090 kw. Comparisons with municipal sources may be more pertinent here than with power companies.

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customers and where there is a good demand for our products. We will

continue to do our best to maintain our quality standards and to

improve our products to meet the needs of our customers. We will

also continue to develop new products and to expand our market

by concentrating on the production of high quality products and

by continuing to improve our products and to meet the needs of our